



Australian Bureau of Statistics

1352.0.55.083 - Research Paper: Measuring and Correcting for Information Loss in Confidentialised Census Counts (Methodology Advisory Committee), Nov 2006

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Summary

About this Release

The Australian Bureau of Statistics (ABS) has developed a new confidentiality protection method for census tables, to be applied for 2006 census data. The method differs from more traditional disclosure control methods in that there are a number of parameters that can be set to fine-tune the methodology. In order to determine the best settings for these parameters, the ABS has investigated and attempted to balance the benefit (level of protection or reduction of risk of identification) with the cost (damage done to the integrity of the table, or the information loss). This paper discusses a number of ways to measure information loss in tables. In particular, a detailed examination of the chi-square test of association in a three dimensional table is undertaken. We show that the confidentiality procedure produces a positive bias on this statistic and on certain partitions of it. As a result of this work, we are able to quantify the impact on the chi-square test of association due to the confidentiality protection, and provide advice for users on how to compensate for this effect.

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